Bonneville Power AdministrationAdministration
Fish and Wildlife Program FY99 Proposal FormWildlife Program FY99 Proposal Form

Section 1. General administrative information

Reduce Erosion, Identify Access and Improve Aquatic Health in and Adjacent to the Bonneville Power Line Corridor

Bonneville project number, if an ongoing project 9054

Business name of agency, institution or organization requesting funding

Business acronym (if appropriate) USDA FS

Proposal contact person or principal investigator:

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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
USDA FS	215 Melody Lane	Wenachee, WA 98801	KenMacDonald/ Charles Phillips

NPPC Program Measure Number(s) which this project addresses
N/A

NMFS Biological Opinion Number(s) which this project addresses.
N/A

Other planning document references

Subbasin

Short description

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	+	Construction	X	Watershed
+	Resident fish	+	O & M		Biodiversity/genetics
+	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research	+	Ecosystems
	Climate	+	Monitoring/eval.		Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.		Supplementation
		+	Enforcement	+	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Reduce Erosion	a	Evaluate Road access
		b	Decrease lateral roads by obliteration or decomissioning
		c	If necessary surface permanent roads
		d	Improve drainage on permanent roads by placing waterbars, cleaning ditches, adding ditches, adding culverts, hardrocking ford crossings, and general road maintenance.
		e	Close roads with gates or berms
		f	Limit access with gates or berms
		g	Plant riparian vegetation
		h	Resore native vegetation to closed, obliterated, and other unnecessary roads
2	Restore shade and cover over	a	Reestablish riparian vegetation

	the stream adjacent to BPA power line corridors		
		b	Evaluate options to cutting all riparian vegetation out under power lines with BPA
3	Improve aquatic habitat adjacent to BPA power line corridor	a	Evaluate habitat condition
		b	Plant riparian vegetation
		c	Place instream woody debris, root wads, or boulders necessary to improve habitat
		d	Reduce sedimentation from adjacent roads
4	Improve fish passage	a	Evaluate stream crossings
		b	Install culverts that improve fish passage and allow passage of debris.
5	Monitor before, during, and after projects to insure effectiveness	a	Monitor water quality
		b	Monitor fish habitat attributes
		c	Monitor riparian vegetation
		c	Monitor road use and closures
		e	Monitor Implementation
		f	Monitor recolonizing of native vegetation on obliterated/decomissioned roads
		g	Monitor erosion on obliterated/decomissioned roads

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	6/1999	11/2002	87.00%
2	6/1999	11/2002	3.00%
3	6/1999	11/2002	5.00%
4	6/1999	11/2002	1.00%
5	6/1999	12/2003	4.00%
			TOTAL 100.00%

Schedule constraints

Completion date

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel	1 GS9 Engineer(3m), 1 GS 11 fish Bio(3m), 1 GS 7 Forest/bio tech(3m),1 GS9 Wildife Bio(1m) for NEPA, contract inspection, BA=s, presurveys,2GS7-1m of Monitoring.	57,000
Fringe benefits		
Supplies, materials, non-expendable property	4 gates; film; stakes; grass seed	14,000
Operations & maintenance	Gate locks and Enforcement	600
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs		
Subcontracts	10 miles of drainage work 100 acres to plant in 2002-nursery(30,000)	40,000
Other		
TOTAL		$ 111,600

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	55,000	170,000	160,000	15,000
O&M as % of total	0%	0%	0%	0%

*built in approximately 10% for project management in 2002-2003 NEPA and Project Prep time is built into 1999.

Section 6. Abstract

The items to be subcontracted would include: any road work which includes building waterbars, ditches, placing culverts, pulling culverts, which may include the use of graders, excavators, and a D3-4 cat; the subsoiling of unnecessary roads which would most likely include the use of a D7 cat and a hydraulic subsoiler attachment;

obliteration of road prisms (including removing or partial removal of cut and fill slopes) which would most likely include an excavator; grass seeding of the obliterated roads; fish habitat restoration work which may include a walking excavator, dumptruck to haul boulders, a log truck to haul logs, and a loader to unload logs; Gravel surfacing which may include the gravel and the dumptruck to haul it, and a grader; Seed picking/cleaning of native seeds; nursery contract to grow the native seed.

The overall project goals are to improve anadromous fish, native fish, and aquatic health adjacent to and within the BPA power line corridors. The objectives are to reduce sedimentation to streams from roads, to restore riparian connectivity by reducing road miles in the riparian areas, to improve aquatic habitat complexity under and adjacent to the power line corridor, to improve water quality by improving overhead cover and shade and by reducing erosion from unstable stream banks and roads, to evaluate effectiveness of activities aimed at improving anadromous and native fish habitat.

The relevance to the Fish and Wildlife Program would be that this project is designed to improve aquatic habitat quality not only adjacent to the BPA powerlines but within the watershed. Road miles will be decreased, necessary road drainage improved, aquatic habitat diversity improved water quality maintained/improved, riparian function improved, and fish passage improved.

The best available data will be used to determine project design. The Wenatchee National Forest as well as other forests have been implementing road decommissioning for some time and have data available to design partial or full bench road decommissioning projects. The Subsoiler is one available method that is adequate at decompacting road prisms. There is much scientific data relating road locations, design, and miles to a decrease in aquatic habitat diversity, stream sedimentation, fish passage problems due to poor culvert design, and the lack of riparian connectivity. There is as well, much information about fish habitat restoration, as much of the 80=s and early 90=s was spent on restoring fish habitat (Reeves et al in Meehan, 1991)(Rosgen, 1996). First, all the watershed analysis documents in the Wenatchee River watershed seem to address this in their collection of data and analysis. Numerous other authors address stream channel stability (Rosgen,1996), erosion and mass wasting problems (Furniss et Al in Meehan, 1991).

The expected outcome is that within the Nason Creek, Chumstick Creek , and other Wenatchee River tributaries, road miles will decrease and power line access will be delineated and maintained. In turn will help to reduce the erosion and mass wasting problems associated with roads, reduce road maintenance costs, sedimentation to the water, rehabilitate riparian reserves, add complexity back to adjacent aquatic habitat, stabilize adjacent stream banks and power line towers, and return shade and cover to the stream adjacent to the power lines. Getting the access roads delineated will help the Forest Service and other private land owners delineate their access, which in turn with help decrease unnecessary road miles in the watershed and reduce a substantial amount of road related problems to aquatic habitat and water quality. The time frame for implementing the total project will be five years. The time frame for the project to be effective will be approximately 1-20 years in the future. With road or fish passage

projects that decrease erosion and increase fish passage showing almost immediate results on up to riparian revegetation projects taking up to possibly 20 years before there are large enough trees/brush grown to produce shade over the streams.

Results will be monitored through repeatable techniques for fish habitat and population surveys, water quality monitoring, road closure enforcement, revegetation monitoring, and sediment surveys that the Wenatchee National Forest specialists will implement.

Section 7. Project description

a. Technical and/or scientific background

The concern within and adjacent to the BPA power line corridor is the effect of roads, lack of riparian vegetation, tower location and stability (Mill Creek in upper Nason Creek), fish passage at road crossings and the effects on fish and aquatic habitat. As well, there is a concern for effects to wildlife species that associate with or are dependent on riparian areas. In the Wenatchee River basin, Nason Creek and Chumstick Creek are the most heavily impacted by poor water quality and riparian connectivity. Erosion, high stream temperatures, and channel instability have been shown in watershed analysis documents to be persistent issues in these watersheds. The project will be a sort of mitigation for the effects of the placement, maintenance, and persistence of the BPA power line corridor. In Nason Creek, the railroad, utility corridors, and state highway are major disturbances in the watershed. These disturbances can only be addressed by coordination and cooperation of private, federal, and public resources. The proposed project is one of many that needs to be coordinated to improve watershed conditions. The watershed conditions will not show improvement if these pieces of the watershed are not addressed. Receiving funding to implement this project will occur at a time necessary to implement watershed restoration work especially with the salmon and native fish which occur in the Wenatchee River basin are being listed or proposed to be listed on the Endangered Species List. Most National Forest road systems in Nason Creek have had drainage work and some closures with AJobs in the Woods≅ funding since 1993. Road projects will be proposed in the Chumstick Watershed Analysis, which is in process due to the high road density and high sediments loads found in surveys. This project is the next logical step in watershed restoration associated with disturbances (esp. Roads). Future coordination is necessary to determine work that may be needed on ≅Cost Share≅ roads and roads on private lands to improve overall watershed health, long term aquatic habitat and populations, and riparian dependent wildlife populations.

b. Proposal objectives

Objectives Include:

1. Reduce erosion
2. Improve shade and cover over stream adjacent to BPA power line corridor
3. Improve aquatic habitat adjacent to the BPA power line corridor

4. Improve fish passage
5. Monitor effectiveness of projects.

Reports that would result from this project would include: An effectiveness monitoring report which would report on fish or aquatic habitat or populations, water quality, stream channel and bank stability, sedimentation, erosion / mass wasting, road access problems, gates, enforcement, and overall effectiveness of design and methodology.

Products that would result from this project would include: Increased water quality; improved fish habitat diversity, possibly increasing spawning locations and ultimately fish populations; decreased disturbance in the riparian areas; increased riparian connectivity; increased fishing/hunting opportunities; decreased wildlife disturbances; decreased access; decreased road maintenance costs; increased upstream fish habitat if barriers are removed; and decreased road miles in the watershed.

c. Rationale and significance to Regional Programs

The rational behind this project is to try to maintain and improve watershed health to aid in maintaining and improving fish and aquatic habitat and in the long run fish and aquatic populations. The proposed work with further goal in all fish and wildlife programs. It will help meet watershed goals defined in the watershed analysis done by the Wenatchee National Forest, goals set by the state in the state watershed analysis process, and especially goals of sediment and road reductions and analysis set by the Yakama Indian Nation. The work performed in the Wenatchee River basin, will help improve baseline conditions for aquatic species which the U.S. Fish and Wildlife Service and National Marine Fisheries Service has helped to define in the Section 7 consultations/conferences. The BPA power line corridor is a major disturbance in the Nason Creek sub watershed and this project will help display coordination and cooperation essential to maintaining and improving the health of the aquatic habitat and populations within it.

d. Project History

N/A

e. Methods.

Scope: The scope of this project is the BPA power line corridor and adjacent lands in the Wenachee River Watershed specifically in Nason Creek, Chumstick Creek, and the Wenatchee River mainstem near the town of Plain and Natapoc Mountain. It would involve restoring/improving and maintaining aquatic habitat adjacent to roads that access the power lines and its towers, to the tower location, and to any other disturbance associated with the location of the power line corridor.

Approach: The approach is one of a whole watershed approach. This project is designed

to effectively deal with disturbances caused to resources located adjacent to and within the BPA power line corridors in the Wenatchee River watershed.

Methodology:

Tasks (described and listed under each objective):

Reduce Erosion- The tasks that are involved to reduce and eliminate unnecessary erosion adjacent to and within the BPA power line corridors are listed below. 1) To first evaluate the road condition; identify areas for maintenance, drainage improvement, rebuilding, relocating, and surfacing; identify passage barriers; identify necessary access roads; identify riparian revegetation needs; identify stream bank and channel stability areas; with an inventory survey. 2) Decrease lateral roads by obliteration or decomissioning by using an excavotor and/or a D7 CAT with a hydraulic excavator. 3) If necessary surface permanent roads with six inches or more of gravel or crushed rock. 4) Improve drainage on permanent roads by placing waterbars, cleaning ditches, adding ditches, adding culverts, hardrocking ford crossings, and general road maintenance by using a road grader, D3 Cat, aond/or and excavator. 5) Close or limit access on necessary roads by installing gates of using earth berms. 6) Plant riparian vegetation using native grass, hardwood, and conifer species. 7) Revegetate newly obliterated or decomissioned roads with native vegetation adjacent to site and with a grass seed that will not inhibit native vegetation recolonization.

Restore shade and cover over the stream adjacent to BPA power line corridors- The tasks that are involved to restore shade and stream cover include: 1) Reestablish riparian vegetation with plantings of hardwoods and conifers and establish grass and forbes with seed; and 2)Evaluate options to cutting all riparian vegetation out under power lines with BPA.

Improve aquatic habitat adjacent to BPA power line corridor- The tasks associated with this objective are: 1) Evaluate habitat condition with a stream habitat survey; 2) Plant riparian vegetation as discussed above in objectives one and two; 3) Place instream woody debris, root wads, or boulders necessary to improve habitat and maintain bank and channel stability by using a walking excavator or a regular track hoe with a thumb attachment; and 4) Reduce sedimentation from adjacent roads as discussed above in objective one.

Improve fish passage- The tasks involved with improving fish passage involve: 1) Evaluate stream crossings with an inventory and an engineer; 2) Install culverts that improve fish passage and allow passage of debris for larger streams consider installing an open bottom arch culvert on permanent access roads. Installation will require an excavator and possibly a D3 CAT

Monitor before, during, and after projects to insure effectiveness- The tasks associated with monitoring are listed below. 1) Monitor water quality (locally and more distant from the project before), during, and after project implementation and for some time in the future (until vegetation reestablishes). Monitor storm events to determine effectiveness of tasks implemented. 2) Monitor fish habitat attributes to determine if

there has been an improvement in sedimentation and or diversity. 3) Monitor riparian vegetation to determine lack of vegetation, planting techniques, and if recolonization is occuring. Monitor riparian vegetation to determine if connectivity is occuring. 4) Monitor recolonizing of native vegetation on obliterated/decomissioned roads to determine if recolonization is occuring and if it is helping to stop erosion. 5) Monitor erosion on obliterated/decomissioned roads to determine effectiveness of project design. 6) Monitor road access and closures to determine effectiveness of design and erosion problems. 7) Monitor implementation of project to determine problems in contracts, timing, design, and personnel.

Critical Assumptions: The critical assumptions are based on the fact that implementation of this project will improve water quality which in turn will improve aquatic habitat. Fish and aquatic habitat which is improved will help to improve or maintain anadromous and native fish, and aquatic habitat.

Description of proposed studies, experiments, treatments or operations in the sequence that they are to be carried out:

In 1999, the NEPA and biological assessment work needs to be carried out first by the Forest Service. Next a road inventory/survey needs to be accomplished to refine project designs. Thirdly, the aquatic habitat needs to be assessed and monitored adjacent to and within the power line corridors. Fourth, contracts need to be drawn up for road work, riparian planting, and aquatic restoration. Finally, road drainage/maintenance work can begin. In 2000, the rest of the road drainage work can be completed, obliteration work can begin, and aquatic habitat and stream channel/power line tower stability work can be implemented. In 2001, road surfacing should begin and road obliteration should be completed. In 2002, road surfacing should be completed. Finally, in 2003, monitoring and report writing should occur and the project should be completed.

Special animal care or environmental protection requirements: There will be requirements in biological assessments that will focus project timing away from spotted owl nesting and rearing times, periods of intense rainstorms, and spawning of listed and proposed fish species. If heavy equipment is working in the stream and a fuel, oil, or hydraulic spill occurs, the State Department of Ecology and Fish and Wildlife will need to be informed.

Risks to habitats, other organisms, or humans: There will be minimal effects and risks taken if instream work is implemented, to fish and aquatic habitat in the short term. If instream work is implemented, there will be minimal effects caused to fish populations in the short term, due to the possibility of killing a fish and harassment of the fish by the equipment in the stream. There will be the risk of increasing erosion in the short term until vegetation recolonizes closed and obliterated roads. This will be less of a risk than leaving the roads open to use and erosion. Risks associated with wildlife may be short term disturbance and harassment from the trucks and heavy equipment, but the benefits

outweigh negative effects. Risks to humans may be associated with the confrontation with heavy equipment working on the roads, of which will be very low.

Methods for monitoring and evaluating results and kinds of results expected: Monitoring and evaluation will follow previous protocols used to monitor project implementation and effectiveness. They will be reported in a report to the Forest Supervisors office for inclusion in the yearly monitoring report. A level three habitat survey can be performed on any aquatic structure work. Plot surveys can be completed ithe riparian areas to measure riparian vegetation growth, enforcement records can be used to monitor access use and closures, and road surveys can be completed to insure that road maintenance is effective.

f. Facilities and equipment

Preparation /contract inspection/ monitoring: The Lake Wenatchee and the Leavenworth Ranger Districts will handle the contracts/inspection/monitoring. The preparation of NEPA documentation will occur at the district offices. There will be suitable office space for any required personnel. A rental vehicle may be require for inspection and monitoring of the contract(s)/projects.

Heavy Equipment: Subcontract cost may be slightly higher with the equipment requirements. All heavy equipment necessary for project implementation will be required by the subcontractor: because the Forest Service doesn't own it or it may be being used at the time needed. For example the contracts may require: the hydraulic subsoiler, excavator, dump truck, log truck, loader, and D3&D7 CAT, and possibly a walking excavator. The hydraulic subsoiler may prove to be expensive but it is one of the only pieces of machinery that has been proven to decompact soils effectively enough so that erosion does not become a worse problem on closed roads. The walking excavator, if used, has been the most successful at limiting disturbance is the stream bed, and is slightly more expensive than the normal track hoe. There are subcontractors in the area with these pieces of machinery.

Revegetation: A contracted nursery will be involved with the growing of native seed and the collection of native plants. A contractor will be responsible for spreading grass seed and using vegetation on site to revegetate any obliterated/decommissioned roads.

g. References

Section 8. Relationships to other projects8. Relationships to other projects. Relationships to other projects

Indicate how the project complements or includes collaborative efforts with other projects; put the work into the context of other work funded under the FWP. If the proposed project requires or includes collaboration with other agencies, organizations or scientists, or any special permitting to accomplish the work, such arrangements should be fully explained. If the relationship with other proposals is unknown or is in conflict with another project, note this and explain why.

This is not intended to duplicate the Relationships table in Section 3. Instead, it allows for more detailed descriptions of relationships, includes non-interdependent relationships, and includes those not limited to specific Bonneville projects.

Type here (provide answers in paragraph form)
This project is expected to compliment other watershed restoration type projects previously implemented in Nason Creek as AJobs in the Woods Projects and other projects that will be occurring in the upper Wenatchee mainstem and in Chiwaukum Creek. It will help to restore watershed health in a cooperative type of project. Cooperation will be with the US Fish and Wildlife Service, BPA, and the Forest Service. This project will help to initiate the coordination with other agencies and private persons that is necessary to apply restoration projects in the Wenatchee River basin. This project is a piece in the puzzle to accomplish watershed restoration for maintaining, improving, and enhancing fish, aquatic, and wildlife habitat and populations. There are other proposals for projects with the U.S. Fish and Wildlife Service on private land in the Chumstick Creek sub watershed. This project would fit well with those projects in that watershed restoration would be occurring holistically to help restore fish, aquatic, and wildlife habitat and populations.

Section 9. Key personnel. Key personnel

Key personnel that would help to get this project implemented would be the Forest Service engineer and roads specialists at Lake Wenatchee and Leavenworth Ranger Districts. The Wildlife and Fisheries biologists, hydrologist, Nepa specialist, silviculturist, and botonist at the two districts would be key personnel involved in the project design and implementation. The District Ranger would be the decision maker on any Nepa documentation necessary for the project. Coordination would occur with the Wenatchee Forest Service Supervisors Office biologists and hydrologists. Coordination would occur with the State Fish and Wildlife fish habitat personnel and they would be involved in any instream habitat work and a hydraulic permit would be obtained from them. The U.S. Fish and Wildlife fish and wildlife biologists would be involved in any Section 7 consultation/conferencing necessary for the project implementation.

Section 10. Information/technology transfer

Technology and any information learned from this project would be transferred in the form of monitoring reports between the Forest Service districts and the Supervisors Office and between the U.S. Fish and Wildlife Service Section 7 and Forest Plan monitoring efforts the Forest. Reports would be sent to regional offices. The public could obtain copies of the reports from the Offices discussed above.